letters to nature

Room-temperature ferroelectricity in strained $SrTiO_3$

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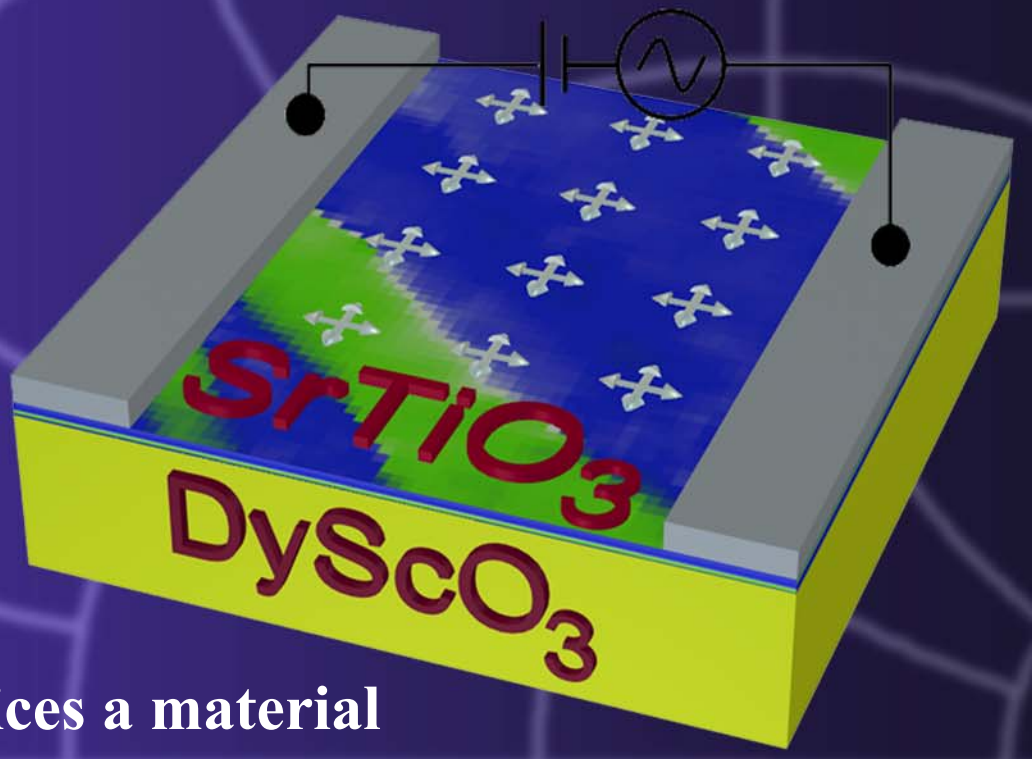
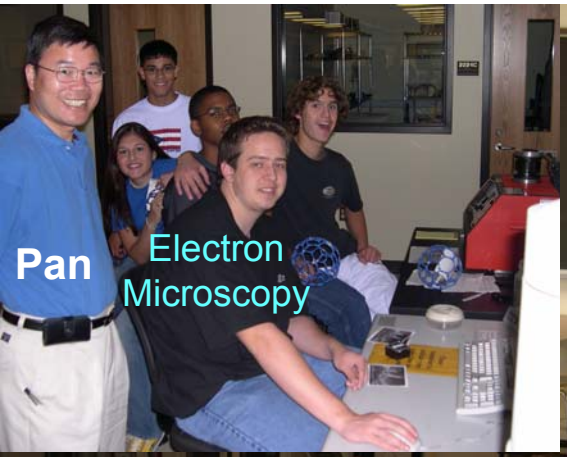


For a variety of microwave devices a material is needed whose dielectric constant (ε_r) at microwave frequencies may be tuned. $SrTiO_3$ has been recognized for decades to be a promising material for these applications, but only at cryogenic temperatures. Through strain-engineering, we have achieved high ε_r and tunability *at room temperature* in $SrTiO_3$ films with properties comparable to bulk $SrTiO_3$ at cryogenic temperatures. This was achieved by applying enormous strains—strains far larger than can be applied to bulk single crystals—to thin single crystal films of $SrTiO_3$ using a newly developed substrate, $DyScO_3$.

NIRT K-12 Educational Outreach
WINDOWS ON THE MICROSCOPIC WORLD OF MATERIALS



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Buckeyball Break at University of Michigan

A group photograph from their lunch break; that is why not everyone has a Buckyball yet. From the Outreach Effort:

WINDOWS ON THE MICROSCOPIC WORLD OF MATERIALS